Claim Rejections - 35 USC § 112

6. The following are quotations of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claims 2 – 4, 16 – 18, 25 – 27, 36 – 38, 52, 57, and 74 are rejected** under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 2 and 3 recite the limitations of "said wireless receiver" in line 1, "said GPS processing path" in lines 2 – 3, and "said frequency hopping signal processing path" in lines 3 - 4. There are insufficient antecedent basis for these limitations in the claim.

Regarding claim 4 recites the limitations of "said wireless receiver" in line 1, "said GPS processing path" in lines 2, and "said frequency hopping signal processing path" in lines 3. There are insufficient antecedent basis for these limitations in the claim.

Regarding claims 16 – 18 recite the limitation of "said wireless channel" in line 1-2. Are they related to "a wireless channel baseband signal" recited in claim 10, lines 4 – 5?

Regarding claims 25 - 27 recite the limitation of "said wireless channel" in line 1-2. Are they related to "a wireless channel baseband signal" recited in claim 30, lines 4 – 5?

Regarding claims 36 - 38 recite the limitation of "said wireless channel" in line 1-2. Are they related to "a wireless channel baseband signal" recited in claim 19, lines 4 – 5?

Regarding claim 52 recites the limitation of "said downconversion" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 67 recites the limitation of "said changing" in line 1 being not cleared. Is it changing the first frequency or changing the second frequency?

Regarding claim 74 recites the limitation of "said on chip amplifier" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> *A person shall be entitled to a patent unless –*
> *(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.*

9. **Claim 6 is rejected** under 35 U.S.C. 102(e) as being anticipated by Hoffberg (US patent # 6,429,812 B1).

Regarding claim 6, Hoffberg inherently discloses an apparatus, comprising:

an IF module within a wireless (column 1, lines 15 – 16) receiver (column 19, line 10), the IF module having an IF filter, the IF filter having a first bandwidth for a GPS signal processing path and a second bandwidth for a frequency hopping path (column 34, line 66 to column 35, line 21).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. **Claims 1 and 3 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Hoffberg (US patent # 6,429,812 B1).

Regarding claim 1, Hoffberg discloses the wireless (column 1, lines 15 – 16) receiver (column 19, line 10) comprising:

- An integrated circuit (column 25, lines 13 – 15) frequency hopping (column 35, lines 15 – 16)/GPS receiver (column 25, line 16) that inherently receives a downconversion signal (column 35, lines 3 – 4) from a frequency synthesizer (column 35, line 40), that frequency synthesizer having a phase lock loop (column 35, line 40).

Hoffberg differs from the claimed invention that it does not state that the frequency synthesizer having a phase lock loop with an operative range is less than the difference between an ISM band frequency and a GSM carrier frequency.

However, one in ordinary skill in the art is able to operate the frequency synthesizer having a phase lock loop in a low range less than any limitation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Hoffberg so as the frequency synthesizer having a phase lock loop with an operative range is less than the difference between an ISM band frequency (column 20, line 61) and a GSM carrier frequency (column 1, line 23) in order to be easy to select the information in different sources.

12. **Claims 2 and 5 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Hoffberg (US patent # 6,429,812 B1), in view of Black et al. (US patent # 5,278,994).

Regarding claim 2, as followed by the limitations analyzed in claim 1, Hofferg differs from the instant claimed invention that it does not further comprise an RF module having an off chip amplifier and on chip amplifier for GPS signal processing path, and having an on chip amplifier for the frequency hopping signal.

However, Black et al. discloses a RF module having on and off chip amplifier (abstract and column 1, lines 24 – 46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Hoffberg and Black et al. so as to control the signal processing paths for making sure only the desired frequency will come to each signal processing path.

Regarding claim 5, the limitations are analyzed in the same manner set forth as claim 2.

13. **Claims 4 and 7 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Hoffberg (US patent # 6,429,812 B1), in view of Black et al. (US patent # 6,678,503).

Regarding claim 4, Hoffberg differs from the claimed invention that it does not state that wherein the receiver further comprising a digitize module having an IQ combiner for the GPS signal processing path and an FSK demodulator for the frequency hopping signal path.

Black et al. teaches (figure 2) that the receiver comprising a digitizing module having an IQ combiner (18) for FSK demodulator for frequency hopping signal path (column 2, lines 15 – 17, lines 58 – 61) and ISM band frequency signal path. From the preceding information, one in ordinary skill can change the ISM band frequency signal path by the GPS signal processing path without effort.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Hoffberg and Black et al. so as the receiver further comprising a digitize module having an IQ combiner for the GPS signal processing path and an FSK demodulator for the frequency hopping signal path for improving the communication system.

Regarding claim 7, the limitations are analyzed in the same manner set forth as claim 4.

14. **Claim 8 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US patent # 6,366,622 B1).

Regarding claim 8, Brown et al. discloses that the frequency synthesizer (column 19, lines 46 – 47) having a PLL (column 11, lines 58 – 59), the PLL having a feedback coupled to a sigma delta modulator (column 11, lines 58 – 66, column 13, lines 23 – 24), the sigma delta modulator configured to receive an access word, which can be named and called as control word (column 25, lines 29 – 35).

Brown et al. differs from the claimed invention that it does not state that the frequency synthesizer having a phase lock loop with an operative range is less than the difference between an ISM band frequency and a GSM carrier frequency.

However, from the preceding information, one in ordinary skill in the art can operate the frequency synthesizer having a phase lock loop in a low range less than any limitation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Brown et al. so as the frequency synthesizer having a phase lock loop with an operative range is less than the difference between an ISM band frequency (column 20, line 61) and a GSM carrier frequency (column 1, line 23) in order to be easy to select the information in different sources.

15. **Claims 9 and 44 are rejected** under 35 U.S.C. 102(e) as being anticipated by Schwaller et al. (US patent # 6,230,026 B1), in view of McHale et al. (US patent # 6,385,203 B2).

Regarding claim 9, Schwaller et al. discloses (figure 1) that a wireless receiver (abstract) having a GPS processing path and a frequency hopping path (column 2, line 56 to column 3, line 14, column 4, lines 6 – 42).

While McHale et al. discloses (figure 3) that the wireless (column 6, lines 10 – 14) transceiver (108) has a controller (80) with switch (104) for selecting desired input (column 9, lines 31 – 42).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Schwaller et al. and McHale et al. so as to enable of selecting GPS or frequency hopping path.

Regarding claim 44, Schwaller et al. discloses a method, comprising (figure 1, column 2, line 20 to column 3, line17):

- Transmitting antenna (29) for transmitting a first wireless (frequency hopping) packet;
- Receiver (36) for receiving a GPS signal (column 3, lines 13 – 14, column 4, line 24); and
- Receiving antenna (11) for receiving a second wireless (frequency hopping) packet, wherein the GPS received the signal at any time or between the first wireless transmission and the second wireless packet reception, the first and second wireless packets being members of a frequency hopping wireless network (column 2, line 56 to column 3, line 17).

While McHale et al. discloses (figure 3) that the wireless (column 6, lines 10 – 14) transceiver (108) has a controller (80) with switch (104) for selecting desired input (column 9, lines 31 – 42).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Schwaller et al. and McHale et al. so as to enable of selecting GPS or frequency hopping path.

16. **Claims 45 and 48 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Schwaller et al. (US patent # 6,230,026 B1), in view of Schneither (US patent # 6,377,562 B1).

Regarding claim 45, as followed by the limitations analyzed in claim 44 by Schwaller et al., Schwaller et al. differs from the instant claimed invention that they do not show wherein the transmitting a wireless packet further comprises synthesizing a frequency that corresponds to a wireless channel over which the first wireless packet been transmitted.

However, Schneither discloses the transmitting a wireless packet further comprises synthesizing a frequency (column 2, lines 14 – 20) that corresponds to a wireless channel (column 1, lines 6 – 9) over which the first wireless packet been transmitted

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Schwaller et al and Schneider so as the frequency synthesizer synthesizing the frequency of wireless channel of a frequency hopping been transmitted.

Regarding claim 48, the limitations are analyzed in the same manner set for as claim 45, plus Schwaller et al. further discloses that the tuner (block 12 of figure 1) downconverts the signal (column 4, lines 47 – 58) and, of course, it has its own frequency.

17. **Claim 54 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Schwaller et al. (US patent # 6,230,026 B1).

Regarding claim 54, Schwaller et al. discloses (figure 1, column 2, line 39 to column 3, line 17):

- Transmit a first wireless signal carried within a wireless channel at a first carried frequency, the first wireless signal corresponding to a first wireless packet (column 7, lines 1 – 7);
- Changing the first frequency to a second frequency to receive a second wireless signal carried at a second carrier frequency, the second wireless signal is a GPS frequency (column 5, lines 53 – 56);
- Changing the second frequency to a thirds frequency to receive a third wireless signal carried at a third carrier frequency, the third wireless signal corresponding to a second

wireless packet, the first and second packets are members of a frequency hopping wireless network (column 4, line 43 to column 5, line 31).

Schwaller et al. differs from the instant claimed invention that it does not show the step of synthesizing a first frequency to transmit a first wireless signal.

However, Schwaller et al. discloses a method for supporting the frequency hopping ustilizing real-time switching RF carriers over a TDM bus between RF transceiver resources and digital signal processing resources (column 2, lines 39 – 67). From preceding information, one of ordinary skill in the art is able to build a frequency synthesizer for synthesizing a first frequency to transmit a first wireless signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Schwaller et al. to provide the step of synthesizing a first frequency to transmit a first wireless signal for supporting the changes of frequencies in a frequency hopping system (column 2, lines 56 – 67).

18. **Claim 54 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Schneither (US patent # 6,377,562 B1), in view of Abbey (US patent # 6,151,354 B1).

Regarding claim 54, Schneither discloses (figure 3):

- Frequency synthesizer (block 70 of figure 3) for synthesizing a first frequency a first wireless carried within a first wireless channel at a first frequency (output of buffer # 1 of figure 3, column 2, lines 16 – 20), the first wireless signal corresponding to a first wireless packet;
- Changing first frequency to a second frequency to receive a second wireless signal carried at a second frequency (input of buffer # 1 of figure 3, column 5, lines 62 – 65);
- Changing the second frequency to a third frequency to receive a wireless signal carried at a third frequency, the third frequency wireless signal corresponding to a

second wireless packet (input of buffer # 2 of figure 3, column 6, lines 12 – 21), the first and second wireless packets are members of a frequency hopping wireless network (column 2, lines 20 – 23).

Schneider differs from the instant claimed invention that it does not clearly describing its invention in the claimed language and a second wireless signal is a GPS signal.

However, Abbey discloses a second wireless signal is a GPS signal.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to recognize Schneider as the same language as the instant claimed invention and combine Schneither and Abbey to improve the communication system.

19. **Claims 55, 63, 67, and 69 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Schwaller et al. (US patent # 6,230,026 B1), in view of Leipold et al. (US patent # 6,658,748 B1).

Regarding claim 55, as followed by the limitations analyzed in claim 54, Schwaller et al. differs from the instant claimed invention that it does not show the step of providing a sigma-delta modulator with a control word to synthesize the first frequency.

However, Leipold et al. provides a sigma-delta modulator with a control word to synthesize the first frequency (column 7, lines 6 – 35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Schwaller et al. and Leipold et al. to provide the step of providing a sigma-delta modulator with a control word to synthesize the first frequency for improving the communication system

Regarding claim 63, as followed by the limitations analyzed in claim 54, Schwaller et al. differs from the instant claimed invention that it does not show the step of providing a sigma-

delta modulator with a control word that replaces a pre-existing control word, the replacement causing the changing form second frequency to the third frequency.

However, Leipold et al. provides a sigma-delta modulator with a control word that replaces a pre-existing control word, the replacement causing the changing from the second frequency to the third frequency (column, lines 1 – 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Schwaller et al. and Leipold et al. to provide the step of providing a sigma-delta modulator with a control word that replaces a pre-existing control word, the replacement causing the changing from the second frequency to the third frequency for improving the communication system.

Regarding claim 67, as followed by the limitations analyzed in claim 54, Schwaller et al. and Leipold et al. differ from the instant claimed invention that they do not show the step of giving the changing occurs within 10 microseconds.

However, giving the changing occurrence in a specific time interval is on hand of one of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Schwaller et al., and Leipold et al. to provide the step of giving the changing occurs within 10 microseconds for ensure the changing has to occur at a specific changing interval.

Regarding claim 69, as followed by the limitations analyzed in claim 54, Leipold et al. further discloses that its invention is used in frequency hopping corresponding to a Bluetooth network (column 8, lines 57 – 62).

20. **Claims 66 and 68 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Schwaller et al. (US patent # 6,230,026 B1), Leipold et al. (US patent # 6,658,748 B1), further in view of Hoffberg (US patent # 6,529,812 B1).

Regarding claim 66, as followed by the limitations analyzed in claim 63, Schwaller et al. and Leipold et al. differ from the instant claimed invention that they do not show the step of comprising toggling a frequency hoping/GPS control signal to frequency hopping state so as to cause the replacing of the GPS control word with the control word.

However, Schwaller et al. discloses the ping/pong structure of the DP-RAM allows a digital signal processor to swap the sections of the DP-RAM at predetermined intervals that are used to map RF channels to the TDM bus (column 2, lines 64 – 67).

While Leipold et al. provides a sigma-delta modulator with a control word used for frequency hopping (column 8, lines 58 – 59) that replaces a pre-existing control word, the replacement causing the changing the control words (column 7, lines 18 – 35)

And Hoffberg discloses a should be integrated frequency hopping (column 35, line 16) and GPS control signal (column 23, lines 66 - 67, column 25, lines 13 - 15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Schwaller et al., Leipold et al., and Hoffberg to provide the step of providing comprising toggling a frequency hoping/GPS control signal to frequency hopping state so as to cause the replacing of the GPS control word with the control word for improving the communication system.

Regarding claim 68, as followed by the limitations analyzed in claim 66, Schwaller et al. Leipold et al., and Hoffberg differ from the instant claimed invention that they do not show the step of the reception of the second wireless signal lasts for 200 microseconds.

However, giving the reception of the second wireless signal lasting in a specific time interval is on hand of one of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Schwaller et al., Leipold et al., and Hoffberg to provide the step of giving the reception of the second wireless signal lasts for 200 microsecond for ensuring the reception of the second wireless signal has to last at a specific lasting interval.

21. **Claims 70 and 71 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Schwaller et al. (US patent # 6,230,026 B1), in view of Harry Newton in "Newton's Telecom Dictionary", ISBN # 1-57820-069-5, 17th edition, published by CMP Books February 2002, pp. 96 – 97.

Regarding claims 70 and 71, as followed by the limitations analyzed in claim 54, Schwaller et al. differs from the instant claimed invention that it does not state that wherein the frequency hoping wireless network corresponds to an IEEE 802.11 wireless network or to a HomeRF wireless network, respectively.

However, according to Harry Newton in "Newton's Telecom Dictionary", page 96 – 97, both of IEEE 802.11 and HomeRF are the specific wireless networks, which operate using frequency hopping spread spectrum.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Schwaller et al. to provide the step of giving the changing occurs within 10 microseconds for ensure the changing has to occur at a specific changing interval.

22. **Claims 72 and 89 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Abbey (US patent # 6,151,354 B1).

Regarding claim 72, Abbey discloses (figure 3) that a GPS receiver (column 8, lines 34 – 39), that of course has a signal processing path corresponding to a first signal processing path and a frequency hopping signal of course has a signal corresponding to a second signal processing path, both of them process in wireless network (column 4, line 49), the first signal processing path inherent having a lower noise than the second signal processing path, and the wireless receiver having a control input (blocks 39, 40, 41 corresponding to a control input and column 5, line 47, column 6, lines 14 – 15) that enables the GPS signal processing path or the frequency hopping signal processing path (column 8, lines 23 – 42).

Abbey differs from the instant claimed invention that it does not use the integrated frequency hopping/GPS receiver instead of receiver circuits (60A-D) (column 8, line 23 – 25).

However, as a purpose of Abbey (multi-mode, multi-band, multi-user), it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Abbey to built the integrated frequency hopping/GPS receiver instead of receiver circuits (60A-D) for saving the component's cost.

Regarding claim 89, Abbey discloses (figure 3) that a GPS receiver (column 8, lines 34 – 39), that of course has a signal processing path corresponding to a first signal processing path and a frequency hopping signal of course has a signal corresponding to a second signal processing path, both of them process in wireless network (column 4, line 49), the first signal and second signal processing paths inherent flowing through an A/D converter (column 2, line 41), and the wireless receiver having a control input (blocks 39, 40, 41 corresponding to a control input and column 5, line 47, column 6, lines 14 – 15) that enables the GPS signal processing path or the frequency hopping signal processing path (column 8, lines 23 – 42).

Abbey differs from the instant claimed invention that it does not use the integrated frequency hopping/GPS receiver instead of receiver circuits (60A-D) (column 8, line 23 – 25).

However, as a purpose of Abbey (multi-mode, multi-band, multi-user), it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Abbey to built the integrated frequency hopping/GPS receiver instead of receiver circuits (60A-D) for saving the component's cost.

23. **Claims 73 and 74 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Abbey (US patent # 6,151,354 B1), in view of Black et al. (US patent # 5,278,994).

Regarding claim 73, as followed by the limitations analyzed in claim 72, Abbey differs from the instant claimed invention that it does not further show wherein the first signal processing path comprising an off chip amplifier and the second signal processing path does not comprise an off chip amplifier.

However, Black et al. discloses a RF module having on and off chip amplifier (abstract and column 1, lines 24 – 46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Abbey and Black et al. so as to control the signal processing paths for making sure only the desired frequency will come to each signal processing path.

Regarding 74, Abbey further discloses the gain of the receiver to be reduced for the high level signal, thereby burying the low level signal in receiver noise (column 1, lines 54 - 56).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to equate the high level signal to on chip amplifier and low level signal to off chip amplifier.

24. **Claims 75 – 79 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Abbey (US patent # 6,151,354 B1), in view of Hoffberg (US patent # 6,429,812 B1).

Regarding 75, the limitations are analyzed in the same manner set forth in claim 72, plus, Abbey differs from the instant claimed invention that it does not show the step of first and second signal processing paths flowing through a common downconverter.

However, Hoffberg inherently discloses that the signal processing paths of frequency hopping frequency and the GPS frequency flowing through a common downconverter (column 35, lines 3 – 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Abbey and Hoffberg so as to help the controller easier to select among the paths for improving the communication system.

Regarding claim 76, the limitations are analyzed in the same manner set forth in claim 72, plus, Abbey differs from the instant claimed invention that it does not show the step of first and second signal processing paths flowing through a common IF filter.

However, Hoffberg inherently discloses that the signal processing paths of frequency hopping frequency and the GPS frequency flowing through a common IF filter depending on a bandwidth (column 35, lines 3 – 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Abbey and Hoffberg so as to help the controller easier to select among the paths for improving the communication system.

Regarding claim 77, as followed by the limitations analyzed by claim 76, Abbey and Hoffberg differs from the instant claimed invention that they do not show wherein the common IF filter has a first bandwidth if the first signal processing being selected and a second bandwidth if the second signal processing being selected.

However, Hoffberg further discloses that the IF filter works depending on the data signal bandwidth (column 35, lines 3 – 12).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Abbey and Hoffberg so as to help the controller easier to select among the paths for improving the communication system.

Regarding claims 78 and 79, as followed by the limitations analyzed by claim 76, Abbey and Hoffberg differs from the instant claimed invention that they do not show wherein the first bandwidth is 2.00 MHz and the second bandwidth is 1.25 MHz, respectively.

However, assigning a specific frequency for a specific bandwidth is on hand of one in ordinary skill in the art. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Abbey and Hoffberg to show wherein the first bandwidth is 2.00 MHz and the second bandwidth is 1.25 MHz, respectively, for a designed choice.

25. **Claim 80 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Abbey (US patent # 6,151,354 B1), Hoffberg (US patent # 6,429,812 B1), in view of Hernandez (US patent # 6,441,701 B1).

Regarding claim 80, as followed by the limitations analyzed by claim 77, Abbey and Hoffberg differs from the instant claimed invention that they do not show wherein the common IF filter further comprises a varactor, the varactor having a capacitance that helps to determine the IF filter has the first bandwidth or the second bandwidth, the varactor coupled to the frequency hoping/GPS control.

However, Hernandez discloses an IF filter comprises a varactor, the varactor having a capacitance (column 3, line 36) that helps to determine whether the IF filter has the first bandwidth or the second bandwidth, the varactor coupled to the control.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Abbey, Hoffberg, and Hernandez so as to help the controller easier to select among the paths for improving the communication system.

26. **Claim 81 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Abbey (US patent # 6,151,354 B1), Hoffberg (US patent # 6,429,812 B1), in view of Li et al. (US patent # 6,584,142 B1).

Regarding claim 81, as followed by the limitations analyzed by claim 77, Abbey and Hoffberg differs from the instant claimed invention that they do not show wherein the common IF filter further comprises a gmC filter. The gmC filter having a current that helps to determine whether the IF filter has the first bandwidth or the second bandwidth, the current determined by the value of the frequency hoping/GPS control signal.

However, Li et al. discloses a filter having the current that helps to determine whether the IF filter has the first bandwidth or the second bandwidth (column1, lines 58 – 63), the current determined by the value of control signal (column 6, lines 14 – 22).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Abbey, Hoffberg, and Li et al. so as to help the controller easier to select among the paths for improving the communication system.

27. **Claims 85 and 87 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Abbey (US patent # 6,151,354 B1), in view of Hoffberg (US patent # 6,429,812 B1).

Regarding 85, the limitation is analyzed in the same manner set forth as the combination of claims 72 and 76.

Regarding claim 86, as followed by the limitations analyzed by claim 76, Hoffberg further discloses a common downconverter prior to the common IF filter

Regarding claim 87, as followed by the limitations analyzed by claim 76, Abbey and Hoffberg differ from the instant claimed invention that they do not show the step of first and second signal processing paths flowing through a common A/D converter beyond the common IF filter.

However, Abbey discloses and A/D converter (column 2, line 41), while Hoffberg discloses a common IF filter (column 35, lines 3 – 12).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Abbey and Hoffberg to show the step of first and second signal processing paths flowing through a common A/D converter beyond the IF filter for a designed choice.

28. **Claims 86 and 88 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Abbey (US patent # 6,151,354 B1), Hoffberg (US patent # 6,429,812 B1), in view of Zhang (US patent # 6,154,641).

Regarding claim 86, as followed by the limitations analyzed by claim 76, Abbey and Hoffberg differ from the instant claimed invention that they do not show the step of first and second signal processing paths flowing through a common down-converter prior the common IF filter.

However, Zhang discloses the down-converter prior the filter (abstract and column1, lines 50 – 51).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Abbey, Hoffberg, and Zhang to show the step of first and second signal processing paths flowing through a common down-converter prior the IF filter for a designed choice.

Regarding claim 88, as followed by the limitations analyzed by claim 76, the limitations are analyzed in the same manner set forth as the combination of claims 76, 86, and 87.

29. **Claim 90 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Abbey (US patent # 6,151,354 B1), in view of Nasuda (US patent # 5,936,546).

Regarding claim 90, as followed by the limitations analyzed by claim 89, Abbey differs from the instant claimed invention that it does not show wherein the second signal processing path further comprises a FSK demodulator prior to the common A/D converter.

However, Nasuda discloses (figure 1) that FSK demodulator (11) is prior to common A/D converter (14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Abbey and Nasuda to show the step of wherein the second signal processing path further comprises a FSK demodulator prior to the common A/D converter for a designed choice.

30. **Claim 91 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Abbey (US patent # 6,151,354 B1), in view of Darabi et al. (US patent # 6,404,293 B1).

Regarding claim 91, as followed by the limitations analyzed by claim 89, Abbey differs from the instant claimed invention that it does not show wherein the first signal processing path further comprises an IQ combiner prior to the common A/D converter.

However, Darabi et al. discloses (figure 2) that complex BBF (26) combines I signal (24) and Q signal (24) prior to common A/D converter (34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Abbey and Darabi et al. to show the step of wherein the second signal processing path further comprises an IQ combiner prior to the common A/D converter for a designed choice.

31. **Claim 92 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Abbey (US patent # 6,151,354 B1), Nasuda (US patent # 5,936,546), further in view of Darabi et al. (US patent # 6,404,293 B1).

Regarding claim 92, as followed by the limitations analyzed by claim 89, the limitations are analyzed in the same manner set forth as the combination of claims 89, 90, and 91.

32. **Claims 93 and 94 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Abbey (US patent # 6,151,354 B1).

Regarding claims 93 and 94, as followed by the limitations analyzed by claim 89, Abbey differs from the instant claimed invention that it does not show wherein the common A/D converter provides more than 2^2 resolution levels or exactly 2^6 resolution levels for the first and second signal processing paths, respectively.

However, one of ordinary skill in the art is able of showing wherein the common A/D converter provides more than 2^2 resolution levels or exactly 2^6 resolution levels for the first and second signal processing paths, respectively.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement Abbey to show the step of wherein the common A/D converter provides more than 2^2 resolution levels or exactly 2^6 resolution levels for the first and second signal processing paths, respectively, for a designed choice.

Allowable Subject Matter

33. **Claim 10 would be allowable** if rewritten or amended to overcome the objection(s), set forth in this Office action.

34. **Claims 11 – 18, 25 – 27, 29, 36 – 38, 49, 52 would be allowable** if rewritten to overcome the objection(s), or the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

35. **Claims 46, 47, 51, 53, 56 – 62, 64, and 65** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

36. **Claims 19 – 24, 28, 30 – 35, 39 - 43, and 95 – 103 are allowed.** The following is a statement of reasons for the indication of allowable subject matter:

Regarding to claims 19, 30, and 95, the prior art of record fails to show or render obvious of an apparatus as substantial in claims 19 and 30, or an article of manufacture that describes a circuit design for a semiconductor chip as substantial in claim 95, comprising:

- A PLL that provides an output signal that changes from a first frequency to receive a GPS baseband signal to having a second frequency to receive/transmit a wireless baseband signal, wherein the GPS baseband signal is carried in a first modulated format by a first caarier signal, wherein the wireless baseband channel signal is carried in a second modulated format by a second carrier signal, the second carrier signal having a frequency within a range from 2.400 GHz to 2.480 GHz, the difference between the first and the second frequencies is less than the difference between the second carrier signal frequency and 1.575 GHz, the PLL output signal provided at an output of the PLL; or as specific of claim 30 as the PLL having a feedback divider, the feedback divider having an input that control the division performed by the feedback divider, the feedback divider input coupled to an output of a sigma-delta modulator;
- An integrated frequency hopping/GPS receiver having a downconverter had an input as critical in claim 19;
- A first signal path flows from the PLL output, wherein the first signal path propagates a first down-conversion signal in order to receive the GPS baseband signal; and
- A second signal path flows from the PLL output, wherein the second signal path propagates a second down-conversion signal in order to receive the wireless channel baseband signal.

Conclusion

37. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Harry Newton, Newton's Telecom Dictionary", ISBN # 1-57820-069.5. Published by CMP Books, February 2001.

Contact Information

38. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (703) 305-4892. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Ghayour Mohammad H. can be reached on (703) 306-3034. The fax phone numbers for this group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

DXN
June 20, 2004

JEAN B. CORRIELUS
PRIMARY EXAMINER
6/21/04